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IN THIS ISSUE

Nutrition Studies

Rats and Typhus Fever in Texas

Studies of Acute Diarrheal Diseases—Shigellosis

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CONTENTS

	Page
Nutrition studies. II. Methods of collecting dietary data. Miriam G. Eads and Alla P. Meredith	777
Observations on rats and typhus fever in San Antonio, Texas. David E. Davis	783
Studies of the acute diarrheal diseases. XX. Further observations of chemotherapy in shigellosis; the efficacy of streptomycin and sulfacarzole. Albert V. Hardy and Seymour P. Halbert	790
INCIDENCE OF DISEASE	
United States:	
Reports from States for week ended May 22, 1948, and comparison with former years	793
Weekly reports from cities:	
City reports for week ended May 15, 1948	797
Rates, by geographic divisions, for a group of selected cities	799
Plague infection in Guadalupe County, New Mexico	800
Territories and possessions:	
Puerto Rico—Notifiable diseases—4 weeks ended May 1, 1948	800
Deaths during week ended May 15, 1948	800
Foreign reports:	
Canada—Provinces—Communicable diseases—Week ended May 1, 1948	801
Cuba—	
Habana—Communicable diseases—4 weeks ended May 1, 1948	801
Provinces—Notifiable diseases—4 weeks ended May 1, 1948	801
New Zealand—Notifiable diseases—5 weeks ended May 1, 1948	802
Straits Settlements—Singapore—Poliomyelitis	802
Reports of cholera, plague, smallpox, typhus fever, and yellow fever received during the current week—	
Cholera	802
Plague	802
Smallpox	803
Typhus fever	803

Public Health Reports

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NUTRITION STUDIES [1]

II. METHODS OF COLLECTING DIETARY DATA [2]

By MIRIAM G. EADS, and ALLA P. MEREDITH, *Nutrition Consultants, Nutrition Section, Public Health Service*

This is the second of a series of reports relating to the methods employed in evaluating human nutrition on a public-health scale. This report deals with the techniques of accumulating dietary data and the conditions under which each method can be used most satisfactorily.

PURPOSE OF COLLECTING DIETARY DATA

Information about dietary practices of an individual or group is essential in nutrition appraisal studies. Although dietary information alone cannot be used as a means of assessing nutritional status, knowledge of the diet pattern of an individual or group, when studied in relation to biochemical and physical findings, makes a definite contribution to the study of nutritional status.

Dietary appraisal methods have been developed that can (1) be adapted to various groups and conditions met in public-health nutrition work and (2) be applied by health departments in developing nutrition programs. The methods used are as simple as they can be made without sacrifice of accuracy.

The one-day diary type diet record was chosen in preference to either the memory record, or the diet history. It has been found that there will be more accurate recording and description of the amounts of foods eaten if the record is made immediately after the meal. Since there is no indication that significant numbers of people modify their diets on the day the record is kept, this type is believed to be more accurate than a memory record.

[1] From the Nutrition Section, States Relations Division.

[2] The authors express their appreciation to the unit nutritionists and others who have cooperated in developing the methods here presented.

Nutritionists recognize that one day's food intake may not be typical for the individual, but they believe that carefully taken one-day diary records for large groups provide important information about the diet pattern of the group as a whole. Interest is maintained over a short period and people make a real effort to keep accurate records for one day. They tend to lose interest and become careless, however, when they attempt to keep records for several days. Interest can be extended so that such records may be made several times to obtain seasonal and economic variations. By repeating one-day diary records over a period of time, more information about dietary habits probably can be obtained than by using seven-day records taken at any one season or on a much smaller number of individuals.

The three steps to be taken in obtaining a diet record are:

1. Explain the purpose for which the record is to be used; (a) that it is a part of a study of the food habits of the community, and that a large number of people are being asked to participate, (b) that the physician and nutritionist may give helpful suggestions on the participant's own diet.

2. Explain that a record must include only what the person eats on one particular day—not what he "usually" eats.

3. Avoid surprise, approval or disapproval of the person's diet while taking the record. This is especially important in working with children, and particularly when the work is done in the classroom. In studies of children, it has been found advisable to secure records from those in the fourth grade of school and above. Younger children are often unable to report completely or accurately the foods eaten.

The interviewer who develops the proper rapport usually gets accurate records. Care must be taken against inadvertently letting preconceived ideas of foods that belong in certain meals influence the response of the person being interviewed.

Dishes of various sizes and shapes and food models help the person to estimate the quantities of food eaten. All dishes displayed during the interview are marked to indicate capacity in terms of a standard measure.

The accuracy of the diet records obtained in a survey are dependent upon (1) ability to make people understand exactly what is wanted and (2) open-mindedness and patience in probing for information.

METHODS OF COLLECTING DIETARY DATA

Diet records are taken in connection with two types of nutrition appraisal studies for qualitative and quantitative evaluation; the group method is used in rapid surveys, and individual methods are used for detailed studies.

The record form (fig. 1) provides space for recording each meal, food eaten between meals and dietary supplements.

FEDERAL SECURITY AGENCY
U. S. PUBLIC HEALTH SERVICE
NUTRITION SECTION

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Approval expires September 30, 1947.

DIET RECORD FOR CLINIC OR GROUP

Record No. _____ Institution, school, factory, etc. _____

Name _____

Address _____ Place _____ (Town) (County) (State)

Age _____ (Years, months) Sex _____ Race _____ (White, Negro, other) Urban _____ Rural _____

Date _____ (Month) (Day) (Year)

FOODS EATEN

(If you ate food raw, write RAW after that food. Tell how food was cooked. Tell how much you ate of each food. If you did not eat anything, write the word "NOTHING.")

Food Code DO NOT WRITE HERE

For breakfast _____

Between breakfast and noon meal _____

For noon meal _____

Between noon and evening meal _____

For evening meal _____

After evening meal _____

FIGURE 1.

Group Methods

The nutritionist discusses with the group the purpose of the one-day diary record and provides each individual with a copy of the following instructions (fig. 2) for recording the diet. The group reviews the instructions to clarify any questions about procedure.

PUBLIC HEALTH SERVICE NUTRITION SECTION

INSTRUCTIONS TO THE PERSON RECORDING HIS DIET

When you write your diet record

REMEMBER THESE THINGS

1. WRITE DOWN EVERY THING YOU EAT OR DRINK. If you miss a meal, write "NOTHING" in the space for that meal.
2. TELL HOW FOOD IS COOKED. IF YOU EAT A FOOD RAW, WRITE "RAW" AFTER IT.
3. WHEN YOU EAT TWO FOODS TOGETHER, WRITE DOWN BOTH OF THEM—like this:

   1 white roll with jelly
   1 cup black coffee with 1 teaspoon sugar

4. WRITE DOWN HOW MUCH YOU EAT OF EACH FOOD. Tell how many teaspoonfuls or tablespoonfuls you eat; tell whether you eat ¼ or ½ or 1 cup full.
5. BE SURE TO WRITE THE *KIND* OF FOOD YOU EAT. If you eat cereal, write cornflakes, or grits, or oatmeal, or whatever kind of cereal it is. BE SURE TO TELL THE *KIND* if you eat any of these foods: bread, meat, peas, beans, potatoes, soups, salads, or sandwiches.

AFTER YOU FINISH WRITING YOUR RECORD, SEE IF YOU DID THESE THINGS:

1. Did you write down *EVERYTHING* you ate or drank?
2. Did you write down *HOW MUCH* you ate or drank?
3. Did you miss a meal? If you did, write *NOTHING* in the space for that meal. If you didn't eat between meals, write *NOTHING* in the space for between-meal food.

FIGURE 2

Each individual begins by listing the foods eaten at the previous meal. The nutritionist checks some of the records to determine if the required information as to the kind of food, size of portion, and method of preparation, is recorded.

The two subsequent meals, as well as all foods consumed between meals and dietary supplements, are recorded after each meal independently by each member of the group. Instructions for completing the record emphasize that everything put into the mouth and swallowed within the 24-hour period must be recorded. The records are examined briefly for completeness and accuracy when collected by the nutritionist. The information secured by the group method provides insight into possible dietary problems on which a nutrition and health education program in a community can be developed.

Individual Methods

1. The individual method is used in collecting dietary data from persons who have not received previous instructions. The person tells the interviewer what he ate at his most recent meal. The interviewer records not only the food eaten, but also the quantity and method of preparation. At least two interviews with the individual to secure the food intake over a 24-hour period are required. Considered more accurate than the group method, the individual method is used in intensive studies and in instances where dietary records are calculated for essential nutrients.

2. In family studies, individual instructions are given to one member of the family, usually the mother. A nutritionist, or more often a nurse who has received instructions from the nutritionist in the method of taking diet records, makes home visits to invite the family to attend the nutrition clinic. During the visit the purpose of the record is explained. One member of the family is taught how to keep the records. This is done by listing the food the person has eaten at the previous meal.

A copy of the instructions (fig. 2) is left with the family. The completed diet records for all members of the family are brought to the clinic.

The nutritionist reviews the records at the clinic and checks them for completeness of information. Food models, bowls, cups, spoons and glasses are again useful for determining size of portions.

This method is used for family studies and for intensive work with individuals, particularly when a special problem is considered or more detailed information is desired on food habits.

3. A modification of the group and the individual methods are used for more detailed or intensive study of groups. After initial group instruction in keeping of records, the nutritionist interviews each individual to find, as accurately as possible, the kind and quantities of food eaten and method of preparation. This requires two, and possibly three, interviews with each individual, depending on the age levels in the group. The methods and techniques used in the interview are similar to those previously discussed.

The modified method is suitable for collecting dietary information in large scale therapeutic testing, feeding demonstrations, large population studies, or intensive education programs in a community, factory, or school.

In all methods of securing dietary records the nutritionist questions the person to learn whether the record is typical, and to secure any other information that may be pertinent to the diet history. The interview provides an opportunity for the nutritionist to make recommendations to the individual for improving his diet. If the mother of a family is being interviewed, she is given suggestions for improving the diet of the family. The suggested dietary pattern of the National Research Council is used as a guide. Suggestions are kept within the limits of foods available to the person interviewed and his ability to follow suggestions.

At the interview, completed diet records are qualitatively scored by the nutritionist for the presence of the foods that fall into the following groups: green and yellow vegetables; foods rich in vitamin C; other fruits and vegetables; milk; meat, fish or fowl; cheese and eggs; dried legumes and nuts; whole grain products; enriched cereal products; butter and fortified fats.

The dietary evaluation is based on the people studied as a group, and the dietary pattern is determined. The data are expressed as the percent of the people being studied who ate foods included in the above groups. The one-day diary records may also be used for quantitative evaluation of essential nutrients, particularly when intensive studies are being conducted. In both the qualitative and quantitative assessment of the diet the results are compared with the clinical and laboratory findings.

The methods that are presented here are adaptations of methods that have been used by other nutrition workers in various types of nutrition studies. They have been modified and further developed during the course of continuing nutrition appraisal field studies conducted by the Nutrition Section of the States Relations Division of the Public Health Service.

OBSERVATIONS ON RATS AND TYPHUS FEVER IN SAN ANTONIO, TEX.

By DAVID E. DAVIS [1]

INTRODUCTION

Murine typhus fever is a disease of persons caused by rickettsiae, which are transmitted among rats and persons by fleas and occasionally among other ectoparasites and mammals. The complicated series of interactions between etiological agent and hosts responds to seasonal cycles and variations of ecological factors, especially weather.

This paper describes the characteristics of the rats involved in typhus fever, based upon 16 months of observations in San Antonio, Texas. Although the studies were made for a short period of time and in only one place, similar studies in other areas can eventually form a firm foundation for understanding the nature of the interrelations which result in the appearance of the disease in humans.

Climate of locality.—The observations were obtained in the city of San Antonio, Texas, which lies at 29.50° north latitude and 97.50° west longitude. The climate is classed as humid subtropical, but actually is a transition from this type to low-altitude dry-climate type (Trewartha, 1937). The average annual rainfall is 26.86 inches (68.4 cm.) and the average annual temperature is 69° F. (20.1° C.) according to the records of the U. S. Weather Bureau at San Antonio based on observations for 56 years.

The hythergraph (figure 1) shows the monthly average rainfall and temperature for 1885–1940 and the monthly averages during the period of these observations, May 1944 to September 1945. The climate is characterized by mild winters, rainy springs, dry summers, and rainy falls. The hythergraph for 1944–45 shows the great variation which may occur from one season to another.

The hythergraph from May 1944 to September 1945 is the basis for division of the year into six seasons: May and June 1944 (*vernal season*); July and August (*estival season*); September and October (*serotinal season*); November (*autumnal season*); December, January, and February (*hibernal season*); March and April (*prevernal season*); May and June 1945 (*vernal season* of 1945): July and August (*estival season* of 1945). From the hythergraph it is seen that the *vernal* and *serotinal seasons* are warm and wet, the *estival season* is hot and dry, and the *prevernal*, *autumnal*, and *hibernal seasons* are cool and fairly dry. The characteristics of rats are discussed from the viewpoint of these six seasons.

[1] Now at The John Hopkins School of Hygiene and Public Health. Formerly S. A. Sanitarian (R), Public Health Service.

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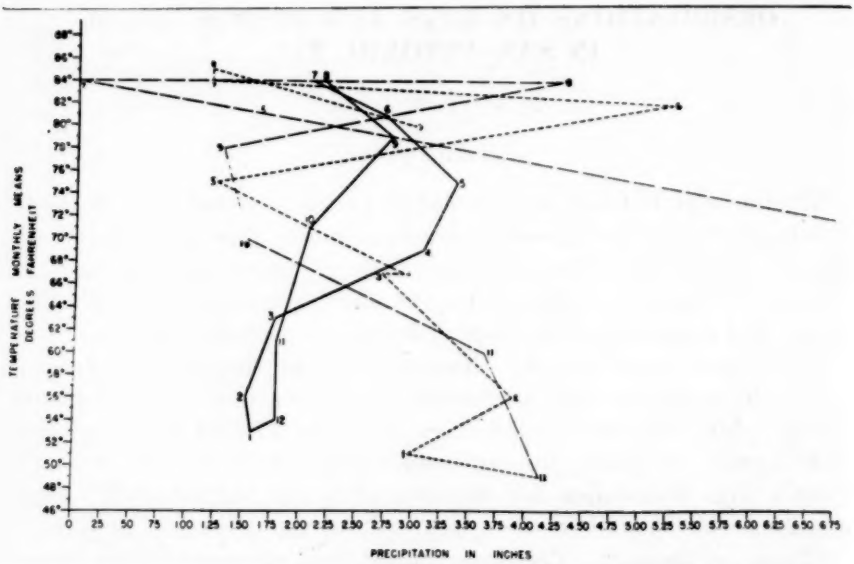

FIGURE 1.—Hythergraph for San Antonio, Texas. The solid line shows the monthly means for 55 years (1885–1940); the dashed line, — —, the monthly means for May–December 1944; and the dashed line _____, those for January–September 1945. The numbers indicate the months.

OBSERVATIONS ON COMMENSAL RATS

Both species of commensal rats (*Rattus rattus* and *Rattus norvegicus*) occur in San Antonio in about equal numbers although the relative abundance differs greatly in various parts of the city. The two species of rats appear to live apart from one another with little actual conflict, and when both species occur in the same building, they seldom occupy the same ecological niches.

Since the roof rat (*R. rattus*) in San Antonio is represented by individuals approximating in color any of the so-called subspecies, *frugivorus*, *rattus*, and *alexandrinus*, and since many intergrades of all three forms have been found, subspecies are not considered further and all rats of this species will be called roof rats (*R. rattus*).

The size (length of head plus body) of both species is shown in table 1. Adult and subadult males of both species average longer than the females. The difference in size between sexes is not significant for young roof rats but is significantly in favor of females for young brown rats. Several interpretations of the latter difference are possible. Perhaps the young females do not travel around until they are larger than the males. Perhaps the time required to reach subadult age (reproductive condition) is greater for females than for males.

The breeding season of rats is of fundamental importance in the natural history of typhus fever. Just before the breeding season, some kinds of rodents move longer distances (Warwick, 1940; Evans, 1942) and during the breeding season a new supply of young susceptible rats is added to the population. Thus a disease may be spread into uninfected areas and may infect non-immune rats.

TABLE 1.—*Head-body length, sex ratio, and age classes of rats*

Age	Sex	Number of rats	Arithmetic mean	Standard deviation	Rats	Percent male	Percent of rats
ROOF RATS							
Adult	Male	317	177.7	[1] 14.2	846	[2] 42.5	38.3
	Female	378	172.8	14.2			
Subadult	Male	148	162.8	[1] 12.6	327	[2] 57.8	14.3
	Female	133	157.3	15.4			
Young	Male	414	122.6	18.5	1,038	50.1	47.4
	Female	369	123.1	20.9			
BROWN RATS							
Adult	Male	293	214.3	[1] 17.1	791	52.8	57.2
	Female	260	201.9	18.9			
Subadult	Male	69	181.6	[1] 13.7	166	51.2	12.0
	Female	58	176.9	15.0			
Young	Male	123	128.3	[1] 25.3	427	47.5	30.8
	Female	147	141.1	22.0			

[1] The differences between sexes are statistically significant at the 0.05 level.
[2] Departure from 50 percent significant at 1 percent level.

The age classes for this study are based upon the reproductive condition, not upon size of body or ossification of the skull, because the important aspect from the ecological and epidemiological viewpoint is whether the rat is reproductively mature. Thus three age groups are distinguished. The young rats have small testes and seminal vesicles or infantile ovaries and threadlike oviducts. The subadult male rats have medium sized testes with obvious spermatic artery and seminal vesicles about ½ cm. long. The subadult female rats have follicles in the ovary and wide white oviducts. The adult male rats have mature testes and large convoluted vesicles. The adult female rats have old corpora lutea and placental scars or are pregnant.

The percentages of rats in each age class are shown by seasons in figure 2. It is not known how much the relative percentages are influenced by the type of traps or the type of poison, but proportions are believed to be comparable from month to month. The presence of young rats in all seasons indicates that young are produced in any season of the year, and the high percentage of young rats in serotinal and autumnal seasons and then again in the vernal season suggests two peaks in the breeding season. The breeding season is also indicated by the high percentage of pregnant females in the vernal season.

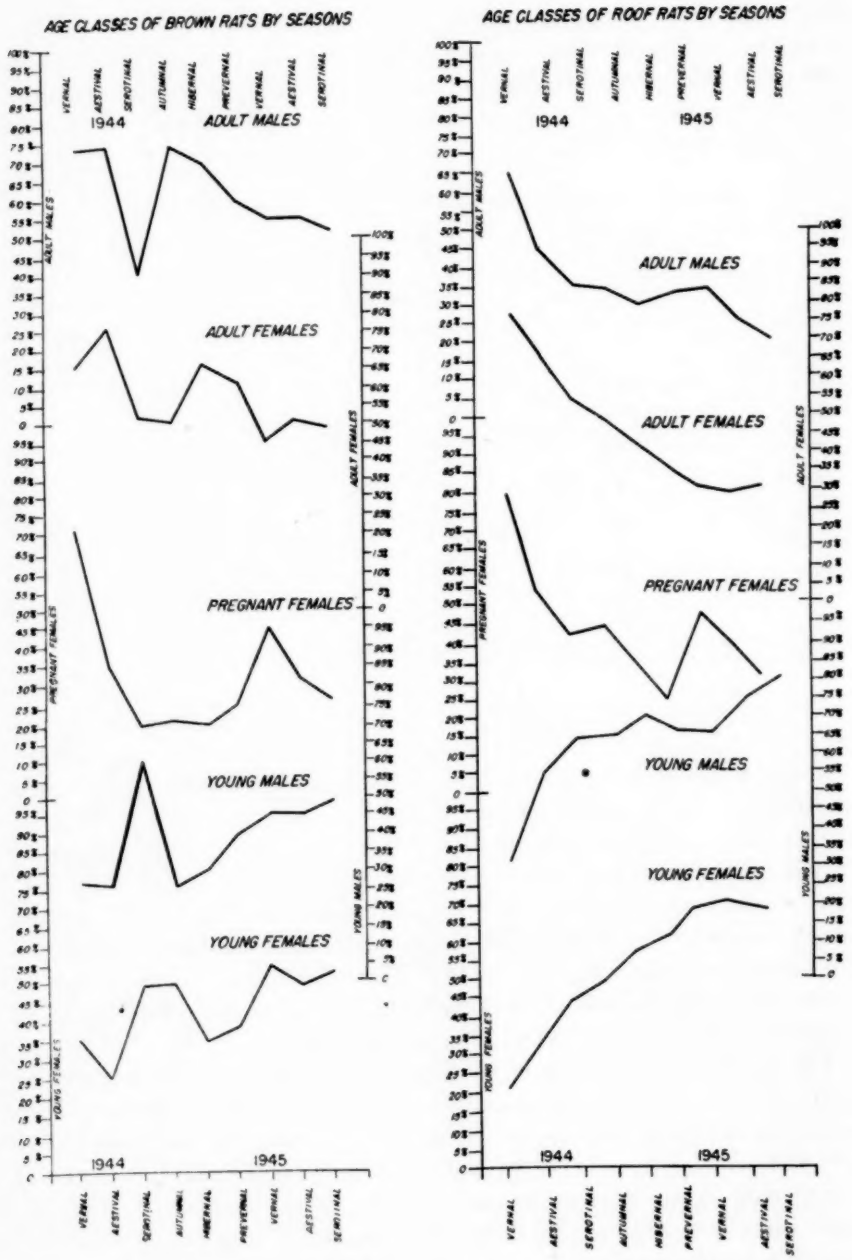

FIGURE 2.—The age composition of roof rats and brown rats and the percent of adult females which were pregnant according to seasons.

Buxton (1936) in a summary of available information concerning breeding seasons of rats throughout the world finds that the maximum breeding season appears to coincide with the warm season in temperate and subtemperate climates but that reproduction occurs throughout the year. The data for San Antonio show no marked breeding season, although there is some seasonal variation and apparently a maximum for both species in the vernal season. It is possible that the persistent breeding found in these rats is due to the fact that almost all the rats examined came from inside buildings where food is ample and climatic changes are minimized. In contrast, roof rats caught primarily in barns and corn cribs in a nearby county showed a seasonal change in breeding (Davis, 1947). In England, Perry (1945) found continuous breeding of outdoor brown rats with a peak in April and May, and an unexplained peak in January.

TABLE 2.—*Size of female rats and number of embryos*

Size in mm.[1]	Rats examined		Percent pregnant		Number of embryos		Arithmetic mean	
	Roof	Brown	Roof	Brown	Roof	Brown	Roof	Brown
120–129	70	----------	0	----------	----------	----------	----------	----------
130–139	94	----------	1	----------	5	----------	5.0	----------
140–149	97	26	2	0	14	----------	7.0	----------
150–159	105	28	12	7	82	11	6.4	5.5
160–169	209	34	15	6	212	15	6.8	7.5
170–179	152	31	32	32	362	72	7.4	7.2
180–189	99	69	40	20	302	108	7.5	7.7
190–199	39	54	31	20	91	88	7.6	8.0
200–209	9	53	44	40	34	171	8.5	8.1
210–219	2	51	100	34	11	126	5.5	7.4
220–229	2	20	0	20	----------	42	----------	8.4
230–239	0	14	----------	14	----------	20	----------	10.0
240–249	----------	7	----------	14	----------	1	----------	1.0
250–259	----------	0	----------	----------	----------	----------	----------	----------
Total	878	387	----------	----------	1,113	674	7.2	7.9

[1] Measurement of head plus body.

The size at which females bear young is shown in table 2. Only a few roof rats breed at a length of less than 150 mm. (head plus body length) and only a few brown rats at a length of less than 170 mm. The length at which 50 percent of the roof rats and of the brown rats are parous is 163 mm. and 178 mm., respectively (Davis and Emlen, 1948). It should be noted that although the modal class for roof rats is 160–169 mm., the highest percent of pregnancies occurred in the class 180–189 mm. (except the small number of rats in larger classes). Similarly for brown rats the modal class is 180–189 mm. and the highest percent of pregnancies occurred in the class 200–209.

The number of embryos in roof rats averages 7.2 per female and tends to increase in larger females (correlation coefficient is +.237).

The equation for the regression line is $y = 175.7 + .16x$ where y is the length size of the rat in mm. and x is the number of visible embryos. The number of embryos in brown rats averages 7.9 and also increases somewhat with size (correlation coefficient is +.113 when largest rat is excluded). The regression line is $y = 200.5 + .095x$. Since King (1924) found that the second litter in an albino rat is the largest and that subsequent litters decline in size, the observed increase in litter size may be interpreted as indicating that few of these rats had produced many litters, or that sociological factors favor larger females.

The sex ratios of rats caught or poisoned are shown in table 1. For roof rats, a significant difference in favor of females occurs in adults, and in favor of males in subadults. Several interpretations are possible. Females may live longer than males, or be easier to capture and poison, or require more time to reach subadult age. The sex differences in brown rats are not significantly different from 50 percent but show an increase in males with age. The sex ratio of the two species differ in the direction of change of sex ratio with age. The percent of male roof rats is lower in adults than in young, but the percent of male brown rats is higher in adults than in young. Buxton (1936) summarized the available information on sex ratios and found great variation from place to place. However, he usually found a ratio in favor of females.

The ratios of age classes are given in table 1. The percent of young in the roof rats was much greater than in brown rats. These results could mean that brown rats live longer than roof rats or that young roof rats are relatively easier to catch than young brown rats.

ANTIBODIES FOR MURINE TYPHUS FEVER

The occurrence of typhus fever in rats can be determined by testing the blood for complement fixing antibodies (Bengston and Topping,

TABLE 3.—*Presence of antibodies in rats*

Type	Total rats examined	Percent positive	Type	Total rats examined	Percent positive
ROOF RATS			BROWN RATS		
Adults	265	34.7	Adults	379	51.4
Male	107	[1] 42.0	Male	187	49.2
Female	158	[1] 29.8	Female	192	53.7
Subadults	117	24.8	Subadults	87	32.2
Male	59	20.2	Male	41	36.8
Female	58	29.2	Female	46	28.2
Young	173	9.7	Young	138	31.2
Male	78	10.2	Male	62	25.8
Female	95	8.4	Female	76	35.6

[1] The sex difference in percent positive for adult roof rats is statistically significant at the 5 percent level.

1941). The percentages of positive tests for all rats (table 3) show that the sex differences are not significant except for adult roof rats. However, since this is the only one of six differences it should not be regarded as established. A comparison of the two species shows a significant difference between the adults and between the young but not between the subadults. Since all differences are in the same direction, these data probably indicate that a higher percentage of brown rats than roof rats has typhus complement fixing antibodies.

Because of population and environmental differences in various types of buildings, it is of interest to compare the percent of positive rats in residences, stores, and grain mills. An analysis of the differences by the x^2 test shows that there are no sex differences but that there are locality differences, that grain mills have more positive rats than either residences or stores, and that these latter two are about the same. When the stores are further subdivided into groceries, cafes, nonfood, and miscellaneous, the rats from groceries and cafes are about equal but the nonfood establishments show a surprisingly high number of positive rats. Rats caught at places suspected to be the source of human cases of typhus naturally show high percentages.

SUMMARY

This paper describes investigations of the life histories of rats and their relation to typhus fever. The observations were made in San Antonio, Texas, which has a humid subtropical climate divided into six biological seasons.

Roof rats (*Rattus rattus*) and brown rats (*R. norvegicus*) are present in the city in about equal numbers. The head plus body length of adult roof rats was significantly larger for males (177.7 mm.) than for females (172.8) and similarly of brown rats was significantly larger for males (214.3 mm.) than for females (201.9 mm.). Reproduction as determined by pregnancy rates and by age ratios occurs throughout the year and has a maximum in the vernal season (May–June). The average number of visible embryos per female was 7.2 for roof rats and 7.9 for brown rats. The sex ratio of trapped or poisoned adult roof rats is significantly in favor of females. The sex ratios of such brown rats is not significantly different from 50 percent. The percent of roof rats which are young is greater than the percent of brown rats.

Of adult roof rats, 34.7 percent were positive for typhus complement fixing antibodies, and 51.4 percent of the adult brown rats were positive (significant difference). The differences between sexes in presence of antibodies for typhus are not significant except for adult roof rats (in favor of males). An analysis of presence of antibodies for

typhus shows that grain mills had a significantly higher percent positive than stores or residences, which were about equal.

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STUDIES OF THE ACUTE DIARRHEAL DISEASES [1]

XX. FURTHER OBSERVATIONS OF CHEMOTHERAPY IN SHIGELLOSIS; THE EFFICACY OF STREPTOMYCIN AND SULFACARZOLE

By ALBERT V. HARDY,[2] *Director, Bureau of Laboratories, Florida State Board of Health,* and SEYMOUR P. HALBERT, *Assistant Surgeon (R) Public Health Service*

The relative efficacy of sulfonamides as observed in the treatment of 2,257 individuals with proved *Shigella* infection has been reported in preceding papers of this series (*1, 2, 3, 4, 5*). More recently, we examined the response to streptomycin and to sulfacarzole, a poorly absorbed sulfonamide (*6*). The findings are stated as a brief supplement to preceding publications.

The patients were all inmates of an institution for the mentally defective in New York State. They ranged in age principally from 5 to 15 years, and almost all were male. The streptomycin was given by mouth, four doses daily. Sweetened milk was a satisfactory vehicle. Treatment was limited to a 3-day period. Three million units of streptomycin were given to each of 20 cases, and 6 million

[1] From the Division of Infectious Diseases, National Institute of Health, with the cooperation of the New York State Department of Mental Hygiene. The work described in this paper was done under a transfer of funds recommended by the Committee on Medical Research, from the Office of Scientific Research and Development to the National Institute of Health.
[2] Formerly, Surgeon (R) Public Health Service.

to each of the other 17 cases. The sulfacarzole, 8 grams daily, was administered in 4 doses, and was continued for 4 days. Sulfadiazine, 4 grams daily to children, was used similarly. All under treatment were cultured daily. The findings, summarized as in preceding papers, are shown in tables 1 and 2. All infections in this series were due to *Shigella* (Flexner type Z.)

TABLE 1.—*Average colony counts per S. S. agar plate before, during, and following chemotherapy*

Chemotherapeutic agent	Number treated	Average colony count by days after beginning treatment							
		0 [1]	1	2	3	4	5	6	7
Streptomycin	37	454	122	8	18	25	[2]	0	0
Sulfacarzole	10	450	392	68	44	[2]	8	[2]	0
Sulfadiazine	10	418	18	1	0	0	0	0	0
Untreated	10	500	271	385	275	325	325	17	107

[1] Day on which treatment started.
[2] Less than .5.

TABLE 2—*Percentage of persons with persisting positive cultures during and following chemotherapy*

Chemotherapeutic agent	Number treated	Percentage with persisting positive cultures by days after beginning treatment								
		0 [1]	1	2	3	4	5	6	7	14
Streptomycin	37	100	81	41	16	8	3	0	0	16
Sulfacarazole	10	100	100	100	40	20	10	10	10	10
Sulfadiazine	10	100	60	20	0	0	0	0	0	0
Untreated	10	100	100	100	100	90	90	70	70	30

[1] Day on which treatment started.

The *Shigellae* rapidly decreased in number in the patients under streptomycin therapy. All cultures were negative for pathogens on the sixth day following the beginning of treatment. They continued so for 3 days, but by the fourteenth day, 6 of the 37 patients had had a recurrence of positive cultures. In the following week, two additional recurrences were observed. The larger dosage did not reduce this tendency of the infection to recur.

It was clearly apparent from examination of the culture specimens, that streptomycin given orally had a profound effect on the intestinal flora. The nonpathogens as well as the *Shigellae* rapidly decreased in number during therapy. The findings are analogous to the observations of Smith and Robinson (7), who quantitatively demonstrated a pronounced reduction in the intestinal bacterial flora of mice given streptomycin by the oral route.

Cases due to sulfonamide-resistant strains of *Shigella* were included among those treated with streptomycin. The sulfonamide resistance

was ascertained on the basis of both clinical and *in vitro* observations. These infections responded just as readily to the streptomycin as did those caused by sulfonamide-sensitive strains. It may be recorded here, incidentally, that no significant toxic reactions to the streptomycin were noted. This is in agreement with the work of Zintel *et al.* (*8*) and others, who have shown that streptomycin is very poorly absorbed from the intestinal tract and, therefore, is essentially nontoxic by this route.

Sulfacarzole, a poorly absorbed sulfonamide, had the weakness of other products of this type. The response was slow. One case failed to become negative.

As in preceding studies, the reaction to sulfadiazine was very satisfactory. Here the colony counts declined rapidly during the first 24 hours of treatment. All cases were negative by the third day and there were no recurrences.

Ten untreated cases were followed with findings as shown in the tables.

Streptomycin may be considered, therefore, for *Shigella* infections which are resistant to sulfonamides. Probably the frequency of recurrences would be decreased by prolonging the period of treatment. We have no data on the development of resistance to streptomycin.

Sulfadiazine was substantially more effective than the poorly absorbed compound sulfacarzole.

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INCIDENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED MAY 22, 1948

Summary

A total of 127 cases of poliomyelitis was reported, in 25 States, as compared with 142 last week and a 5-year (1943–47) median of 38. The 8 States reporting more than 3 cases each (last week's figures in parentheses) are as follows: *Increases*—Iowa 5 (0), Nebraska 9 (0), Georgia 4 (0), Florida 5 (1), California 24 (21); *decreases*—New Jersey 4 (7), North Carolina 13 (18), Texas 39 (60). Only 4 States have reported more than 10 cases since May 1, as follows (last year's corresponding figures in parentheses): New Jersey 13 (1), North Carolina 39 (1), Texas 135 (7), California 59 (32). The total reported since March 20 (approximate average date of low seasonal incidence) is 590, as compared with a 5-year median of 268, reported for the corresponding period last year.

The incidence of measles again increased, from 28,895 last week to a total for the current week of 29,319, as compared with a 5-year median of 22,881. The largest increases, aggregating 2,034 cases, were reported in Massachusetts, New Jersey, Pennsylvania, Virginia, Florida, Colorado, and Utah. In only 2 of the past 12 years has the peak of reported incidence occurred as late as the current week. The total for the year to date is 393,154, as compared with a 5-year median for the period of 396,365.

Of the total of 23 cases of Rocky Mountain spotted fever (last week 8, 5-year median 10) 10 were reported in the South Atlantic area, 8 in the Mountain area, 2 in Tennessee, and 1 each in Pennsylvania, Indiana, and Oklahoma. The total to date is 52, as compared with a 5-year median of 46, reported for the period last year.

New Jersey reported 2 cases of anthrax, Alabama 1 case of smallpox, and Texas 1 case of leprosy.

A total of 8,744 deaths was recorded during the week in 93 large cities in the United States, as compared with 9,388 last week, 8,923 and 8,878, respectively, for the corresponding weeks of 1947 and 1946, and a 3-year (1945–47) median of 8,923. The cumulative figure is 206,973, as compared with 207,368 for the corresponding period last year. Infant deaths totaled 587, as compared with 743 last week and 638 for the 3-year median. The total to date is 14,402, as compared with 16,539 for the same period last year.

Telegraphic morbidity reports from State health officers for the week ended May 22, 1948, and comparison with corresponding week of 1947 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47
	May 22, 1948	May 17, 1947		May 22, 1948	May 17, 1947		May 22, 1948	May 17, 1947		May 22, 1949	May 17, 1947	
NEW ENGLAND												
Maine	3	2	1	------	------	------	22	146	146	0	1	0
New Hampshire	0	0	0	------	------	------	59	4	20	0	0	0
Vermont	0	0	0	------	------	------	22	158	83	0	1	0
Massachusetts	5	8	5	------	------	------	1,610	490	944	2	0	3
Rhode Island	0	0	0	------	------	------	21	243	44	0	2	1
Connecticut	1	0	1	------	2	2	104	955	438	0	1	2
MIDDLE ATLANTIC												
New York	8	14	14	[1] 4	[1] 2	[1] 3	3,055	671	1,316	5	9	26
New Jersey	1	10	2	4	3	5	2,871	577	1,261	1	1	10
Pennsylvania	13	23	11	(2)	(2)	[3] 1	2,533	286	675	3	5	11
EAST NORTH CENTRAL												
Ohio	15	7	7	1	10	10	1,038	834	727	4	7	13
Indiana	14	5	3	1	------	6	722	131	131	0	2	3
Illinois	4	3	11	4	1	4	1,008	227	536	7	5	14
Michigan [3]	2	5	6	------	------	2	1,782	112	661	5	4	8
Wisconsin	1	1	3	2	20	31	1,859	680	2,271	8	2	4
WEST NORTH CENTRAL												
Minnesota	1	8	3	------	------	------	353	655	388	1	1	2
Iowa	1	3	3	5	1	1	177	155	155	1	1	2
Missouri	1	5	3	5	3	3	162	28	188	1	2	5
North Dakota	0	0	1	------	3	1	51	91	68	0	1	0
South Dakota	2	0	1	1	------	------	68	81	35	0	0	0
Nebraska	1	0	3	3	8	5	198	14	195	0	1	1
Kansas	2	6	6	1	11	1	74	10	344	0	2	2
SOUTH ATLANTIC												
Delaware	0	1	1	------	------	------	38	------	23	0	0	0
Maryland [3]	8	5	13	1	5	1	713	63	216	1	0	6
District of Col	1	0	0	------	------	------	123	11	119	1	1	1
Virginia	2	3	4	176	333	103	491	269	376	1	2	4
West Virginia	1	0	1	9	8	------	80	16	97	3	2	2
North Carolina	8	10	10	------	------	------	17	162	402	0	7	6
South Carolina	1	8	5	113	310	175	173	151	151	0	1	2
Georgia	1	4	3	2	8	8	89	87	87	0	2	3
Florida	13	0	3	1	22	3	412	65	65	1	0	5
EAST SOUTH CENTRAL												
Kentucky	2	1	1	------	1	1	183	69	71	4	0	3
Tennessee	1	4	3	8	33	17	142	49	111	6	3	6
Alabama	7	5	3	1	88	23	55	208	154	5	1	7
Mississippi [3]	6	2	3	2	23	------	24	19	------	0	1	1
WEST SOUTH CENTRAL												
Arkansas	1	7	3	41	53	17	118	61	64	3	0	1
Louisiana	9	3	4	3	5	5	8	34	48	1	6	5
Oklahoma	1	2	2	14	79	22	78	3	71	0	0	1
Texas	11	17	23	312	416	416	2,388	394	443	5	5	6
MOUNTAIN												
Montana	0	0	0	1	5	5	63	43	118	0	0	0
Idaho	1	0	0	73	5	1	76	2	9	0	0	0
Wyoming	0	0	0	------	------	------	70	8	51	0	0	0
Colorado	3	5	6	9	14	14	557	72	315	1	0	1
New Mexico	1	2	2	3	1	2	27	72	65	1	0	0
Arizona	0	8	3	28	52	52	394	134	116	0	0	0
Utah [3]	1	1	0	------	------	1	581	5	98	0	0	0
Nevada	0	0	0	------	------	------	4	------	4	0	0	0
PACIFIC												
Washington	1	2	2	------	12	2	723	13	342	0	1	3
Oregon	0	1	1	12	10	11	238	11	115	1	0	2
California	7	14	16	14	12	13	3,665	214	1,451	5	6	19
Total	162	205	205	854	1,559	1,100	29,319	8,783	22,881	77	86	175
20 weeks	3,765	5,217	5,217	132,320	294,233	184,505	393,154	125,498	396,365	1,602	1,760	4,522
Seasonal low week [4]	(27th) July 5–11			(30th) July 26–Aug. 1			(35th) Aug. 30–Sept. 5			(37th) Sept. 13–19		
Total since low	10,123	12,783	13,947	175,878	327,208	327,208	428,100	148,385	434,378	2,384	2,732	6,974

[1] New York City only.
[2] Philadelphia only.
[3] Period ended earlier than Saturday.
[4] Dates between which the approximate low week ends. The specific date will vary from year to year.

Telegraphic morbidity reports from State health officers for the week ended May 22, 1948, and comparison with corresponding week of 1947 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47
	May 22, 1948	May 17, 1947		May 22, 1948	May 17, 1947		May 22, 1948	May 17, 1947		May 22, 1948 [6]	May 17, 1947	
NEW ENGLAND												
Maine	0	0	0	14	15	32	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	6	0	0	0	0	0	0
Vermont	0	0	0	3	2	8	0	0	0	0	0	0
Massachusetts	0	0	0	238	121	357	0	0	0	2	4	2
Rhode Island	0	0	0	12	6	11	0	0	0	0	0	0
Connecticut	0	1	0	15	34	69	0	0	0	0	0	0
MIDDLE ATLANTIC												
New York	1	4	4	[5] 165	331	567	0	0	0	0	3	3
New Jersey	4	0	0	61	100	146	0	0	0	1	0	1
Pennsylvania	1	0	0	254	193	336	0	0	0	1	3	3
EAST NORTH CENTRAL												
Ohio	1	0	1	222	206	357	0	1	1	1	3	4
Indiana	0	1	0	28	55	59	0	3	2	1	0	1
Illinois	2	2	1	97	78	182	0	0	1	4	1	1
Michigan [3]	1	1	0	175	90	230	0	0	0	0	0	2
Wisconsin	1	0	0	54	68	203	0	1	0	2	0	0
WEST NORTH CENTRAL												
Minnesota	3	0	0	56	69	69	0	0	0	1	0	0
Iowa	5	1	0	28	25	44	0	1	0	0	0	0
Missouri	0	1	0	[5] 28	37	53	0	0	0	0	0	1
North Dakota	1	0	0	2	11	11	0	0	0	0	0	0
South Dakota	9	0	0	3	1	14	0	1	0	1	0	0
Nebraska	2	2	0	10	8	24	0	0	0	0	0	0
Kansas	0	0	0	8	30	51	0	0	0	1	1	0
SOUTH ATLANTIC												
Delaware	0	0	0	2	6	6	0	0	0	0	0	0
Maryland [3]	0	0	0	[5] 31	26	155	0	0	0	2	1	1
District of Columbia	0	0	0	7	6	14	0	0	0	0	0	0
Virginia	0	1	1	26	19	46	0	0	0	4	1	1
West Virginia	0	0	0	11	18	23	0	0	0	0	0	1
North Carolina	13	0	0	18	17	27	0	0	0	1	1	1
South Carolina	0	0	1	4	3	6	0	0	0	2	0	2
Georgia	3	0	0	15	8	11	0	0	0	4	3	3
Florida	5	2	0	19	3	6	0	0	0	3	0	1
EAST SOUTH CENTRAL												
Kentucky	0	1	1	20	17	17	0	0	0	1	0	3
Tennessee	2	0	0	15	31	31	0	0	0	5	2	3
Alabama	1	1	0	9	1	9	1	0	0	2	0	1
Mississippi [3]	1	0	1	0	3	6	0	0	0	2	4	1
WEST SOUTH CENTRAL												
Arkansas	1	1	0	0	4	4	0	0	0	1	4	4
Louisiana	3	0	2	4	2	7	0	0	0	4	2	4
Oklahoma	0	1	0	7	4	10	0	1	1	[7] 1	0	0
Texas	39	2	4	55	21	46	0	0	0	10	8	8
MOUNTAIN												
Montana	0	0	0	7	8	20	0	0	0	0	1	0
Idaho	2	1	0	[5] 27	6	13	0	1	0	0	0	0
Wyoming	0	0	0	2	1	11	0	0	0	0	0	0
Colorado	0	0	0	22	39	56	0	0	0	0	0	0
New Mexico	0	0	0	8	8	14	0	0	0	1	0	0
Arizona	1	0	0	2	2	16	0	0	0	0	0	1
Utah [3]	0	0	0	13	21	21	0	0	0	0	0	0
Nevada	0	0	0	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington	1	0	1	32	26	30	0	0	0	1	1	1
Oregon	0	0	0	16	17	22	0	0	0	0	1	1
California	24	15	11	80	100	148	0	0	0	2	3	4
Total	127	38	38	1,925	1,897	3,686	1	9	10	61	47	73
20 weeks	938	880	696	44,920	50,861	79,410	45	127	206	[7] 993	936	1,168
Seasonal low week [4]	(11th) Mar. 15–21			(32nd) Aug. 9–15			(35th) Aug. 30–Sept. 5			(11th) Mar. 15–21		
Total since low	590	268	268	67,459	77,547	117,731	66	181	287	[7] 520	451	560

[3] Period ended earlier than Saturday.
[4] Dates between which the approximate low week ends. The specific date will vary from year to year.
[5] Including cases reported as streptococcal infections and septic sore throat.
[6] Including paratyphoid fever and salmonella infections reported separately, as follows: New Jersey 1, Indiana 1, Virginia 1, Georgia 3, Florida 2.
[7] Delayed report (included in cumulative totals only): Oklahoma, typhoid fever, 4 cases.

Telegraphic morbidity reports from State health officers for the week ended May 22, 1948, and comparison with corresponding week of 1947 and 5-year median—Con.

Division and State	Whooping cough			Week ended May 22, 1948							
	Week ended—		Median 1943–47	Dysentery			Encephalitis, infectious	Rocky Mt. spotted fever	Tularemia	Typhus fever, endemic	Undulant fever
	May 22, 1948	May 17, 1947		Amebic	Bacillary	Unspecified					
NEW ENGLAND											
Maine	6	26	26								1
New Hampshire	30	2	2								
Vermont	32	13	13								
Massachusetts	22	120	132		2		2				
Rhode Island	3	46	21								
Connecticut	17	49	49	1							3
MIDDLE ATLANTIC											
New York	115	184	184	10	4						4
New Jersey	49	242	171	1							
Pennsylvania	55	194	186					1			1
EAST NORTH CENTRAL											
Ohio	37		81	5							5
Indiana	26	39	25				1	1			1
Illinois	39	82	82	12	5						2
Michigan [3]	39	182	158	4	8						5
Wisconsin	42	93	90				1				8
WEST NORTH CENTRAL											
Minnesota	17	49	13	2							4
Iowa	8	27	27								1
Missouri	22	31	21								2
North Dakota	6										
South Dakota	4										1
Nebraska	4	9	7								1
Kansas	39	48	46	1							1
SOUTH ATLANTIC											
Delaware	1	4	3								
Maryland [3]	12	100	59					[5] 4			
District of Columbia	3	5	8								
Virginia	70	73	63			43		2	1		3
West Virginia	6	19	19					2			
North Carolina	42	151	151				1	1			
South Carolina	38	166	105		3						
Georgia	9	54	9		3			1		3	4
Florida	39	92	22		1					3	2
EAST SOUTH CENTRAL											
Kentucky	56	18	18							1	1
Tennessee	28	45	30	8				2	1		
Alabama	70	108	32				1		2	4	
Mississippi [3]	2	18		1						1	2
WEST SOUTH CENTRAL											
Arkansas	19	68	22	13		113			10		
Louisiana	1	13	10	3	1					1	
Oklahoma	30	16	16	1				1	1		
Texas	386	824	288	12	465	106			3	4	8
MOUNTAIN											
Montana	6	7	7						1		
Idaho	3	5	4								
Wyoming	1		1					2			
Colorado	40	36	34					6	1		3
New Mexico	27	48	16								
Arizona	29	41	18			53					1
Utah [3]	22	16	53						1		3
Nevada											
PACIFIC											
Washington	19	25	25			2					
Oregon	34	27	24	4							
California	70	386	373	5	8						1
Total	1,675	3,801	2,550	83	500	317	6	23	21	17	68
Same week, 1945	3,801			61	325	142	8	18	31	33	109
Median, 1943–47	2,550			37	382	118	8	10	17	52	[6] 118
20 weeks: 1948	42,016			1,431	6,050	3,708	177	52	361	284	1,792
1947	55,715			952	5,861	3,955	135	46	621	749	2,102
Median, 1943–47	49,852			597	5,861	2,107	166	46	344	909	[6] 1,760

[3] Period ended earlier than Saturday. [5] 3-year median 1945–47.

Anthrax: New Jersey 2. *Leprosy:* Texas 1.

Territory of Hawaii: Rabies 0, bacillary dysentery 1, leprosy 2, measles 3, scarlet fever 12, whooping cough 6.

WEEKLY REPORTS FROM CITIES *

City reports for week ended May 15, 1948

This table lists the reports from 90 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
NEW ENGLAND												
Maine:												
Portland	0	0	-----	0	2	0	2	0	1	0	0	-----
New Hampshire:												
Concord	0	0	-----	0	1	0	0	0	0	0	0	-----
Vermont:												
Barre	0	0	-----	0	-----	0	0	0	0	0	0	-----
Massachusetts:												
Boston	3	0	-----	0	327	1	10	0	96	0	1	7
Fall River	0	0	-----	0	20	0	0	0	2	0	0	3
Springfield	0	0	-----	0	26	0	1	0	0	0	0	-----
Worcester	0	0	-----	0	39	0	10	0	8	0	0	7
Rhode Island:												
Providence	0	0	-----	0	18	0	2	0	6	0	0	3
Connecticut:												
Bridgeport	0	0	-----	0	2	0	0	0	1	0	0	-----
Hartford	0	0	-----	0	1	0	1	0	1	0	0	1
New Haven	0	0	-----	0	10	0	2	0	4	0	0	9
MIDDLE ATLANTIC												
New York:												
Buffalo	0	0	-----	0	58	1	4	0	12	0	0	8
New York	9	1	4	1	1,449	3	80	1	71	0	2	14
Rochester	0	0	-----	0	2	2	4	0	4	0	0	-----
Syracuse	0	0	-----	0	3	0	2	0	6	0	0	2
New Jersey:												
Camden	0	0	-----	0	22	0	1	0	0	0	0	-----
Newark	1	0	2	0	428	0	6	0	8	0	0	8
Trenton	0	0	-----	0	3	0	1	0	6	0	0	-----
Pennsylvania:												
Philadelphia	2	0	2	2	1,053	2	20	0	36	0	0	13
Pittsburgh	0	0	-----	0	10	1	8	0	58	0	0	3
Reading	0	0	-----	0	5	0	0	0	13	0	0	1
EAST NORTH CENTRAL												
Ohio:												
Cincinnati	0	0	-----	0	127	1	10	0	6	0	0	5
Cleveland	1	0	2	0	50	0	5	0	59	0	1	12
Columbus	0	0	-----	0	69	0	1	0	6	0	0	-----
Indiana:												
Fort Wayne	0	0	-----	0	10	0	2	0	6	0	0	-----
Indianapolis	0	0	-----	0	217	0	0	0	6	0	1	1
South Bend	0	0	-----	0	3	0	0	0	4	0	0	-----
Terre Haute	0	0	-----	0	-----	0	0	0	0	0	0	-----
Illinois:												
Chicago	0	0	-----	1	431	2	13	0	29	0	0	16
Springfield	0	0	-----	0	2	0	2	0	0	0	0	-----
Michigan:												
Detroit	0	5	-----	0	861	1	7	0	66	0	0	7
Flint	0	0	-----	0	3	0	1	0	5	0	0	-----
Grand Rapids	0	0	-----	0	12	0	1	0	5	0	0	5
Wisconsin:												
Kenosha	0	0	-----	0	67	1	0	0	0	0	0	-----
Milwaukee	0	0	-----	0	185	1	1	0	19	0	0	8
Racine	0	0	-----	0	28	0	0	0	2	0	0	1
Superior	0	0	-----	0	130	0	0	0	0	0	0	-----
WEST NORTH CENTRAL												
Minnesota:												
Duluth	0	0	-----	0	278	0	1	0	3	0	0	-----
Minneapolis	0	0	-----	0	22	0	1	0	15	0	0	-----
St. Paul	0	0	-----	0	64	1	2	0	5	0	0	1
Missouri:												
Kansas City	0	0	6	1	23	0	4	0	5	0	0	10
St. Joseph	0	0	-----	0	15	0	0	0	0	0	0	-----
St. Louis	2	0	-----	0	65	0	11	1	0	0	0	6

*In some instances the figures include nonresident cases.

City reports for week ended May 15, 1948—Continued

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
WEST NORTH CENTRAL—continued												
North Dakota:												
Fargo	0	0	------	0	2	0	0	0	0	2	0	------
Nebraska:												
Omaha	2	0	------	0	66	0	3	0	1	0	0	------
Kansas:												
Topeka	0	0	------	0	9	0	2	0	1	0	0	4
Wichita	0	0	------	0	4	0	4	0	2	0	0	9
SOUTH ATLANTIC												
Deleware												
Wilmington	0	0	------	0	14	0	2	0	2	0	0	1
Maryland:												
Baltimore	4	0	1	1	500	3	4	0	9	0	1	2
Cumberland	1	0	------	0	------	0	0	0	2	0	0	------
Frederick	0	0	------	0	------	0	0	0	0	0	0	------
District of Columbia:												
Washington	1	0	------	0	116	0	6	0	3	0	0	1
Virginia:												
Lynchburg	0	0	------	0	2	0	1	0	0	0	0	------
Richmond	0	0	------	0	3	0	1	0	1	0	0	------
Roanoke	0	0	------	0	1	0	0	0	0	0	0	------
West Virginia:												
Charleston	0	0	------	0	10	0	3	0	0	0	0	------
Wheeling	0	0	------	0	14	0	0	0	0	0	0	------
North Carolina:												
Raleigh	0	0	------	0	1	0	1	0	2	0	0	------
Wilmington	0	0	------	0	------	0	0	0	1	0	0	------
Winston Salem	0	0	------	0	------	0	0	2	1	0	0	------
South Carolina:												
Charleston	1	0	5	0	1	0	2	0	0	0	0	1
Georgia:												
Atlanta	0	0	------	0	1	0	0	0	8	0	2	1
Brunswick	0	0	------	0	------	0	0	0	1	0	0	------
Savannah	0	0	------	0	3	0	0	0	1	0	0	------
Florida:												
Tampa	0	0	2	0	8	0	3	0	0	0	0	9
EAST SOUTH CENTRAL												
Tennessee:												
Memphis	0	0	------	0	19	0	10	0	0	0	0	11
Nashville	0	0	------	0	2	1	2	0	2	0	0	------
Alabama:												
Birmingham	0	0	------	1	6	0	1	0	0	0	0	1
WEST SOUTH CENTRAL												
Arkansas:												
Little Rock	0	0	3	0	9	0	1	0	0	0	0	------
Louisiana:												
New Orleans	3	0	------	0	4	1	3	6	3	0	0	1
Shreveport	1	0	------	0	------	0	3	0	0	0	0	------
Oklahoma:												
Oklahoma City	0	0	------	0	5	0	1	0	0	0	0	2
Texas:												
Dallas	3	0	1	0	208	2	0	0	10	0	0	1
Galveston	0	0	------	0	------	0	0	0	0	0	0	------
Houston	1	0	------	0	------	0	4	13	2	0	0	------
San Antonio	0	0	1	1	20	0	1	2	0	0	0	------
MOUNTAIN												
Montana:												
Billings	0	0	------	0	------	0	2	0	0	0	0	1
Great Falls	0	0	------	0	1	0	0	0	0	0	0	------
Helena	0	0	------	0	1	0	0	0	1	0	0	------
Missoula	0	0	------	0	------	0	0	0	0	0	0	------
Idaho:												
Boise	0	0	------	0	------	0	0	0	0	0	0	------
Colorado:												
Denver	0	0	1	0	129	0	3	0	2	0	0	10
Pueblo	0	0	------	0	18	0	0	0	2	0	0	------
Utah:												
Salt Lake City	0	0	------	0	127	0	1	0	3	0	0	2

City reports for week ended May 15, 1948—Continued

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle	1	0	------	0	220	0	0	0	5	0	0	8
Spokane	0	0	------	0	9	0	1	0	[2]2	0	0	------
Tacoma	0	0	------	0	36	0	0	1	3	0	0	------
California:												
Los Angeles	3	0	------	0	368	1	4	3	10	0	1	6
Sacramento	0	0	------	0	24	0	1	0	1	0	0	11
San Francisco	0	0	5	0	264	0	7	2	15	0	0	11
Total	39	6	35	8	8,366	25	293	31	670	2	7	244
Corresponding week, 1947 [1]	73	------	47	11	2,544	------	283	------	613	0	14	882
Average 1943–47 [1]	65	------	51	[3]13	[3]5,327	------	[3]305	------	1,346	1	13	700

[1] Exclusive of Oklahoma City.
[2] 3-year average, 1945–47.
[3] 5-year median, 1943–47.

Rates (annual basis) per 100,000 population, by geographic groups, for the 90 cities in the preceding table (latest available estimated population, 1943, 34,503,900)

	Diphtheria case rates	Encephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcus, case rates	Pneumonia death rates	Poliomyelitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England	7.8	0.0	0.0	0.0	1,166	2.6	73.2	0.0	311	0.0	2.6	78
Middle Atlantic	5.6	0.5	3.7	1.4	1,404	4.2	58.3	0.5	99	0.0	0.0	23
East North Central	0.6	3.0	1.2	0.6	1,335	3.6	26.1	0.0	130	0.0	1.2	33
West North Central	8.0	0.0	11.9	2.0	1,090	2.0	55.7	2.0	64	4.0	0.0	60
South Atlantic	11.4	0.0	13.1	1.6	1,102	4.9	37.6	3.3	51	0.0	4.9	25
East South Central	0.0	0.0	0.0	6.9	186	6.9	89.6	0.0	14	0.0	0.0	83
West South Central	20.3	0.0	12.7	2.5	625	7.6	33.0	53.3	38	0.0	0.0	10
Mountain	0.0	0.0	7.9	0.0	2,192	0.0	47.7	0.0	64	0.0	0.0	103
Pacific	6.3	0.0	7.9	0.0	1,457	1.6	20.6	9.5	57	0.0	1.6	57
Total	5.9	0.9	5.3	1.2	1,268	3.8	44.4	4.7	102	0.3	1.1	37

Dysentery, amebic.—Cases: New York 9; Detroit 1; New Orleans 3; Los Angeles 3.
Dysentery, bacillary.—Cases: New York 1; Charleston, S. C., 2.
Dysentery, unspecified.—Cases: San Antonio 15.
Typhus fever, endemic.—Cases: Tampa 2; Birmingham 1.

PLAGUE INFECTION IN GUADALUPE COUNTY, NEW MEXICO

Under date of May 17, plague infection was reported proved in a pool of 72 fleas from 9 rock ground squirrels, *Citellus variegatus*, taken on April 28 at a location 4 miles west and 2 miles north of Santa Rosa, Guadalupe County, New Mexico, and in a pool of 34 fleas from 8 ground squirrels, same species, taken April 29, 5 miles northwest of Santa Rosa, on the east side of the Pecos River.

TERRITORIES AND POSSESSIONS

Puerto Rico

Notifiable diseases—4 weeks ended May 1, 1948.—During the 4 weeks ended May 1, 1948, cases of certain notifiable diseases were reported in Puerto Rico as follows:

Disease	Cases	Disease	Cases
Chickenpox	89	Syphilis	113
Diphtheria	39	Tetanus	13
Dysentery	7	Tetanus, infantile	3
Gonorrhea	188	Tuberculosis (all forms)	911
Influenza	27	Typhoid fever	9
Malaria	133	Typhus fever (murine)	3
Measles	1,077	Whooping cough	121

DEATHS DURING WEEK ENDED MAY 15, 1948

[From the Weekly Mortality Index, issued by the National Office of Vital Statistics]

	Week ended May 15, 1948	Corresponding week, 1947
Data for 93 large cities of the United States:		
Total deaths	9,388	9,331
Median for 3 prior years	9,202	
Total deaths, first 20 weeks of year	198,229	198,445
Deaths under 1 year of age	743	777
Median for 3 prior years	613	
Deaths under 1 year of age, first 20 weeks of year	13,815	15,841
Data from industrial insurance companies:		
Policies in force	71,062,649	67,292,728
Number of death claims	12,976	11,647
Death claims per 1,000 policies in force, annual rate	9.5	9.0
Death claims per 1,000 policies, first 20 weeks of year, annual rate	10.1	10.0

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended May 1, 1948.—During the week ended May 1, 1948, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		36	3	134	443	49	13	20	105	803
Diphtheria				11	5					16
Dysentery, bacillary				3						3
Encephalitis, infectious				3						3
German measles				30	18		2	3	11	64
Influenza		45			10	5			13	73
Measles		3		614	1,223	7	4	42	161	2,054
Meningitis, meningococcus			1		1	1			1	4
Mumps		6		274	326	38	79	50	19	792
Poliomyelitis				3	1		1			5
Scarlet fever		7	5	55	65	41	2	6	4	185
Tuberculosis (all forms)		7	10	82	25	39	9	10	29	211
Typhoid and paratyphoid fever				3						3
Undulant fever				1	1			1	3	6
Venereal diseases:										
Gonorrhea	2	12		113	78	26	16	41	98	386
Syphilis	1	10	2	43	51	10	3	12	20	152
Other forms									2	2
Whooping cough		4		53	22	8	7	31	1	126

CUBA

Habana—Communicable diseases—4 weeks ended May 1, 1948.—During the 4 weeks ended May 1, 1948, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chickenpox	5		Measles	13	
Diphtheria	11		Tuberculosis	14	
Leprosy	2		Typhoid fever	8	
Malaria	4				

Provinces—Notifiable diseases—4 weeks ended May 1, 1948.—During the 4 weeks ended May 1, 1948, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana [1]	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	3	13	13	16	1	22	68
Chickenpox		5				1	6
Diphtheria		14			2		16
Hookworm disease		19					19
Leprosy		8				1	9
Malaria	7	4	1		1	5	18
Measles		14	6	2			22
Tuberculosis	8	17	16	15	14	18	88
Typhoid fever	6	20	6	24	6	28	90
Whooping cough		63					63

[1] Including Habana city.

NEW ZEALAND *

Notifiable diseases—5 weeks ended May 1, 1948.—During the 5 weeks ended May 1, 1948, certain notifiable diseases were reported in New Zealand as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	6		Ophthalmia neonatorum	1	
Diphtheria	28	1	Poliomyelitis	127	4
Dysentery:			Puerperal fever	8	
Amebic	9		Scarlet fever	109	
Bacillary	29		Tetanus	2	1
Erysipelas	15	1	Trachoma	2	
Food poisoning	5		Tuberculosis (all forms)	178	59
Lead poisoning	2		Typhoid fever	4	
Lethargic encephalitis	2	1	Undulant fever	6	
Malaria	3				

STRAITS SETTLEMENTS

Singapore—Poliomyelitis.—An outbreak of poliomyelitis has been reported in Singapore with a total of 47 cases and 8 deaths during the period April 17–May 11—27 cases with 6 deaths in children, 20 cases with 2 deaths in adults.

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual incidence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during recent months. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

Cholera

India—Calcutta.—During the period April 25–May 15, 1948, 1,269 cases of cholera were reported in Calcutta, India.

Indochina (French)—Cochinchina—Saigon.—For the period April 25–May 15, 1948, 36 cases of cholera were reported in Saigon, Cochinchina, French Indochina.

Pakistan—Lahore.—For the period April 27–May 17, 1948, 73 cases of cholera were reported in Lahore, Pakistan.

Plague

Ecuador—Loja Province.—For the week ended April 24, 1948, 3 cases of plague were reported in Loja Province, Ecuador.

India—Calcutta.—During the period April 25–May 8, 1948, 126 cases of plague were reported in Calcutta, India, and for the week ended May 15, 21 cases were reported.

*Figures published in the table on page 671 of the PUBLIC HEALTH REPORTS for May 14, 1948, were for the 4 weeks ended March 27 instead of April 3.

Pakistan—Lahore.—For the week ended May 1, 1948, 11 cases of plague were reported in Lahore, Pakistan.

Venezuela—Aragua State—Tejerias.—For the week ended May 1, 1948, 7 cases of plague with 3 deaths were reported in Tejerias, Aragua State, Venezuela, instead of 3 cases with 3 deaths as reported earlier. (Pub. Health Rep., May 21, 1948, p. 703).

Smallpox

Ecuador.—During the period March 1–31, 1948, 375 cases of smallpox with 28 deaths were reported in Ecuador, including 38 cases in Guayaquil and 42 cases in Quito. For the period April 1–30, 1948, 264 cases with 34 deaths were reported, including 21 cases in Guayaquil and 16 cases in Quito.

India—Calcutta.—During the period April 25–May 15, 1948, 190 cases of smallpox were reported in Calcutta, India.

Trinidad.—Information dated May 26, 1948, states that the presence of 8 cases of alastrim has been reported in the Colony of Trinidad, and that all necessary precautionary measures are being taken.

Typhus Fever

Bolivia—La Paz Department—La Paz.—For the period April 1–30, 1948, 36 cases of typhus fever were reported in La Paz, La Paz Department, Bolivia.

Ecuador.—For the period April 1–30, 1948, 50 cases of typhus fever were reported in Ecuador.

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